WHAT IS CLAIMED IS:

1. A method of inhibiting intraocular cellular proliferation in an individual having an ocular disease, comprising the step of:

administering to said individual a pharmacologically effective dose of a lentiviral vector comprising a therapeutic gene that inhibits intraocular cellular proliferation.

2. The method of claim 1, wherein said ocular disease is selected from the group consisting of age-related macular degeneration, proliferative diabetic retinopathy, retinopathy of prematurity, glaucoma, and proliferative vitreoretinopathy.

3. The method of claim 1, wherein said therapeutic gene is selected from the group consisting of a constitutively active form of the retinoblastoma gene, p16 gene and p21 gene.

4. The method of claim 1, wherein said lentiviral vector is administered in a dosage of from about 10^6 to 10^9 transducing particles into the capsular, vitreal or sub-retinal space.

5. A method of inhibiting intraocular neovascularization in an individual having an ocular disease, comprising the step of:

administering to said individual a pharmacologically effective dose of a lentiviral vector comprising a therapeutic gene that inhibits intraocular neovascularization.

6. The method of claim 5, wherein said ocular disease is selected from the group consisting of age-related macular degeneration, proliferative diabetic retinopathy, retinopathy of prematurity, glaucoma, and proliferative vitreoretinopathy.

7. The method of claim 5, wherein said therapeutic gene is selected from the group consisting of genes that regulate angiogenesis and genes that regulate apoptosis.

8. The method of claim 7, wherein said genes that regulate angiogenesis encode proteins or polypeptides selected from the group consisting of tissue inhibitor of metalloproteinase (TIMP)-1, TIMP-2, TIMP-3, TIMP-4, endostatin, angiostatin, endostatin XVIII, endostatin XV, the C-terminal hemopexin domain of matrix metalloproteinase-2, the kringle 5 domain of human plasminogen, a fusion protein of endostatin and angiostatin, a fusion protein of endostatin and the kringle 5 domain of human plasminogen, the monokine-induced by interferon-gamma (Mig), the interferon-alpha inducible protein 10 (IP10), a fusion protein of Mig and IP10, soluble FLT-1 (fms-like tyrosine kinase 1 receptor), and kinase insert domain receptor (KDR).

9. The method of claim 7, wherein said genes that regulate apoptosis encode proteins or polypeptides selected from the group consisting of Bcl-2, Bad, Bak, Bax, Bik, Bcl-X short isoform and Gax.

10. The method of claim 5, wherein said lentiviral vector is administered in a dosage of from about 10^6 to 10^9 transducing particles into the capsular, vitreal or sub-retinal space.